

REMARKS

Reconsideration of the above-identified application is respectfully requested.

Claims 1-36 are pending in the present application.

In the Office Action of April 5, 2004, which has been made FINAL, the Examiner rejected Claims 1, 6-8, 12 and 25 and 30 under 35 U.S.C. §102(b), as allegedly being anticipated by Burrows (U.S. Patent No. 5,710,3724)(hereinafter "Burrows"). Further, the Examiner rejected Claims 2, 3-5, 9-11, 13, 15-19 and 21-22, 24, 26-29, 31-33 and 35-36 under 35 U.S.C. §103(a), as allegedly being unpatentable over Burrows in view of Blandy (U.S. Patent No. 6,249,912)(hereinafter "Blandy"). The Examiner additionally rejected Claims 14 and 23 under 35 U.S.C. §103(a), as allegedly being unpatentable over Burrows in view of the reference to Alpern et al. entitled "The Jalapeno Virtual Machine", IBM Systems Journal, Vol. 39, No. 1, February 2000 (hereinafter "Alpern"). The Examiner additionally rejected Claims 20 and 34 under 35 U.S.C. §103(a), as allegedly being unpatentable over Burrows in view of Blandy and further in view of Holzle et al. (U.S. Patent No. 5,995,754) (hereinafter "Holzle").

While consideration of this amendment is not a matter of right, the Examiner, in the rejection of all claims in this Final Rejection dated April 5, 2004, cited new references to Burrows and Blandy. Applicants thus respectfully request entry of this response and submit that the citation of the new reference constitutes good and sufficient reason why the amendment and remarks herein could not have been earlier presented.

With respect to the substantive rejections of independent Claims 1 and 25 under 35 U.S.C. §102(b), the Applicants' respectfully disagree. Although Burrows addresses a similar problem as the present invention, the techniques presented in Burrows teaching (and

claims) is very different from the present invention as claimed. Burrows proposes having two versions of the executing program. The first version remains unmodified (no instrumentation whatsoever is inserted). The second version has instrumentation inserted in such a way that the program size (and all relative offsets) are identical to the first version. An external mechanism (page table mapper) is used to transfer execution from the uninstrumented program to the identical place in the instrumented program.

The technique for collecting executing program runtime information according to the present invention as claimed in independent Claims 1 and 25 is fundamentally different. First, the technique of the invention requires only a single (one) copy of the program. Second, the key difference is that the technique of the invention includes inserting yieldpoints into the program, and these yieldpoints determine whether a sample should be taken. The yieldpoints are executed unconditionally, but the yieldpoint determines whether to execute the remaining instrumentation, i.e., conditionally. To clarify the invention, thus, independent Claims 1, 15 and 25 are being amended to set forth that the sampling operations performed at yield points occur at a subset of the executions of yield points. Respectfully, no new matter is being entered by incorporation of this amendment as full support for this limitation may be found in the current specification, e.g., at page 6, lines 4-16.

Respectfully, Burrows is not anticipatory in that: Burrows clearly does not use yieldpoints (code inserted into the program) to determine when, and at what program points, a sample should be taken. In the Burrows technique, the uninstrumented copy of the program contains no instrumentation; the instrumented copy contains instrumentation, but it is unconditional instrumentation, i.e., it is executed every time when the instrumented program is executing; and, there is no compiler-inserted code that determines when a sample should be taken.

As Burrows does not teach the unconditional execution of yield points and conditional actions performed at executed yield point instances, as clarified in the amendments to each of Claims 1, 15 and 25, it is respectfully submitted that Burrows does not anticipate the amended Claims 1, 15 and 25, and the Examiner is respectfully requested to withdraw the rejection of independent Claims 1, 15 and 25.

With respect to the rejection of independent Claim 15 as allegedly being unpatentable over Burrows in view of Blandy, applicants respectfully submit that Blandy does not make up the deficiencies of Burrows with respect to processing of yield points. Blandy describes a technique for modifying profile data to give more weight to recently executed methods, and Blandy's technique does not perform sampling of any kind. Respectfully, the combination of the approaches taken in Burrow and Blandy does render the present invention obvious to those skilled in the art. Neither patent addresses the idea of inserting yieldpoints which trigger samples whereby the actions performed at yield points occur at a subset of the executions of yield points. As such, the Examiner is respectfully requested to withdraw the rejection of Claim 15 based on the combination of Burrows and Blandy.

It is respectfully submitted that all remaining claims 2-14, 16-24 and 26-36 are dependent upon independent claims whose patentability has been demonstrated by the amendments to respective independent Claims 1, 15 and 25 from which they depend and the remarks presented herein.

Applicants specifically note that, with respect to rejected Claims 20 and 34, Holzle's system is additionally not using sampling. Their system exhaustively increments a counter, and this counter is the only state that is maintained to describe the execution environment. Contrarily, present Claims 20 and 34 describe decrementing and checking a

counter as a sampling mechanism to determine when it is time to observe the state of the environment, which is different from Holzle's technique. A further difference is that Holzle specifies that one counter is used per method (or procedure) in the program, whereas the technique of the present invention does not have this restriction, and can use a single counter for the entire program.

In view of the foregoing, the Examiner is respectfully requested to withdraw the rejection of Claims 20 and 34 under 35 U.S.C. §103(a).

This application is now believed to be in condition for allowance, and a Notice of Allowance is respectfully requested. If the Examiner believes a telephone conference might expedite prosecution of this case, it is respectfully requested that the Examiner call applicant's attorney at (516) 742-4343.

Respectfully submitted,



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